The Excavating Engineer

Vol. 18 NOVEMBER 1924 No. 11

Drainage Excavation with a Diesel-Electric Dragline

Description of Broderick Brothers 1,200,000-Yard Subcontract for the Walb Construction Company at Dune Park, Indiana

FOR a great many years that vast section east of Gary, Indiana, generally known by the natives of Lake and Porter Counties as the "Slue," has lain as a great waste land of twenty thousand acres, a useless and unproductive area of swampland.

This area will soon be drained, and it is with the widening and deepening of the channel of the Little Calumet River and the drainage of this area with which this article will deal, particularly with reference to the dragline excavation upon which the success of the project almost entirely depends. The counties of Porter and Lake, Indiana, have awarded the contracts for the project and the work is well under way. It is expected that the job will not be completed until the Fall of next year.

The Walb Construction Company, well-known

The Bucyrus Class-24 Dragline taking a bucket load. This machine handled 84,599 cubic yards during the month of September in a cut from 45 to 50 feet deep.

contractors of La Grange, Indiana, were awarded the contract for the work in January of this year, the greater portion being sublet to Broderick Brothers of Villisco, Iowa.

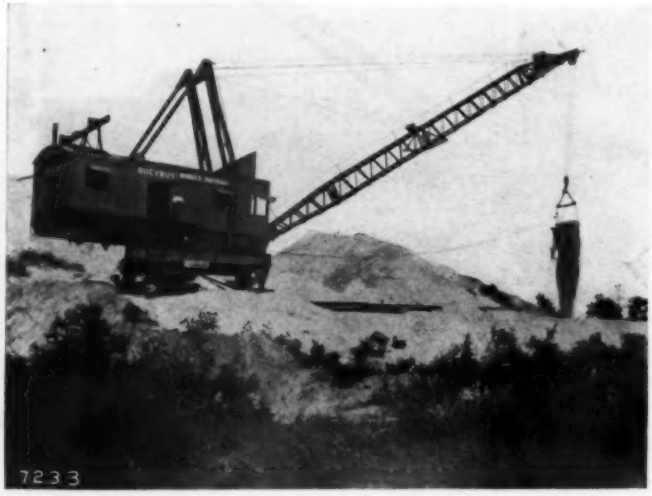
The work consists of widening and deepening the channel of the Little Calumet River in addition to digging a new canal 6500 feet north to Lake Michigan, together with the drainage of what is known as Salt Creek Arm, a small tributary to the Little Calumet. The work of deepening and widening the river channel extends over a distance of 7 miles and involves somewhere in the neighborhood of 1,400,000 cubic yards of excavation. This part of the contract was retained by the Walb Construction Company, and is being done by dredges, while the excavation of the drainage canal and the drainage of Salt Creek Arm, involving about 1,250,000 cubic yards in all, is being done by Broderick Brothers. The large canal entails about 1,000,000 yards of this total.

All of the drainage work being done by the latter concern is being handled by a Bucyrus Diesel-Electric Class-24 dragline excavator, which is equipped with a 115-foot boom and a 3½-cubic-yard Hansen Automatic dragline bucket and mounted on propelling trucks. The dragline is equipped with a Fairbanks-Morse Type "Y" 150 h.p. Diesel engine whcih drives a General Electric Company electric generator. This in turn supplies current to two direct current mill-type motors, one of which drives the main machinery and the other the swinging machinery. "Stanolind" oil is hauled to the job a distance of about ½ mile in 55-gallon steel drums. The average consumption is 170-200 gallons per 24 hours at about 8 cents per gallon.

Four of the Broderick Brothers; from Left to Right, William, Frank, Harold and Warren.

The dragline was put into operation on July of this year, and has been in constant operation since that time. It was cut in at the edge of Lake Michigan and worked in a southerly direction, taking a cut averaging 35 feet deep, 70 feet wide at the bottom and from 210 feet to 270 feet wide at the top. The material is overcast on either side of the ditch, and consists of loose sand, this being in the heart of the long-famed region of the Sand Dunes of Indiana.

In 21 days of July, working three 8-hour shifts, the dragline handled 77,000 cubic yards, or approximately between twelve and thirteen hundred cubic yards per 8-hour shift. In August and September the dragline got into deeper cutting. The cut was at all times 45 to 50 feet deep instead of 35 feet which was handled during July. This naturally had a tendency to slow up the output somewhat. In spite of this, however, 84,599 cubic yards was their mark for September.



View of the Dragline Dumping. This Machine Handled 77,000 Cubic Yards of Material in 21 Days.

The work which is expected to last for over a year from the time this article is written involves the crossing of the Gary & Western Railroad, the main line of the New York Central, the South Bend and Lake Shore Electric and the famous Dunes Highway extending 25 miles from Gary to Michigan City. The cut extends 4½ feet below water level, and half of the completed cut may be seen in the accompanying photographs. About 150,000 cubic yards have been excavated as this article is written.

Broderick Brothers have a number of successful contracts to their credit, the last job they completed having been near Thedford in the township of Bosanquest, Ontario. The job involved the handling of

500,000 yards of deepening and widening the Aux Sauble River, and was done entirely by a Bucyrus Class-20 steam dragline excavator. The firm of Broderick Brothers is a family affair, there being four brothers in all, Warren, Frank, William and Harold — all of whom have had long experience in the operation of shovels and draglines. Ellis, another brother, is operating the dragline on one of the shifts. The vast range of experience found in the combination of the four brothers has given that company a wealth of practical knowledge to draw from; and as one of the brothers has said, "No one is the boss, all work together for the common good of the company." It is true that this splendid spirit is working out for the "common good," and we can be assured that the work will be successfully completed in contract time.

"Efficiency—Watch Us Dig"

W. H. Hauser of Oakland, California, Started on a Shoestring a Short Time Ago — Today He Is One of the Largest Grading Contractors in California

THE watchword of W. H. Hauser, an expert steam shovel operator of Oakland, California, is "efficiency." He is efficient himself, he pays well for the most efficient help, he buys nothing but the most modern and efficient equipment, and his stationery and advertising always carry the motto "Efficiency — Watch Us Dig."

And to watch Mr. Hauser dig is to understand the phenomenal success which he has achieved, although he has been in business for himself for only a year. In the space of just a few months he has built his business up to a point where it is known all over California.

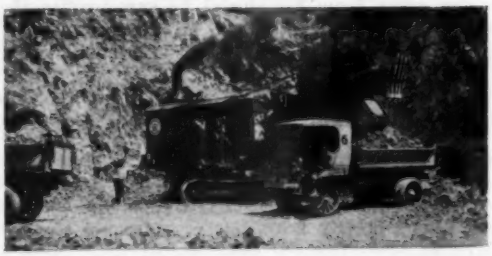
His success is typical of the enterprising American spirit which has made this the leading industrial nation of the world. For several years he was employed as a steam shovel operator, working for good wages it is true, but nevertheless just for wages. But he was too good a steam shovel operator to be satisfied with such an arrangement. Every time a truck load of dirt pulled away from his shovel he saw profits that he himself might just as well have had. And with an eye to the future, Mr. Hauser started saving his money.

In October of 1922 he decided that the time had come to fulfill his ambition and he started

View of W. H. Hauser's 20-B Steam Shovel Loading Into Auto Car Dump Trucks

a grading business of his own. Out of his earnings he had saved enough money to purchase a steam shovel and two 4-cylinder 4 to 6-ton Autocar dump trucks. Within a few weeks contracts were coming his way so fast that he had to tax the ability both of his men and his equipment to complete them.

Each quickly done and well-finished grading contract led to more, with the result that in less than six months after he went in business for himself his equipment was completely paid for and he had a substantial profit in the bank. The



Views of Some of W. H. Hauser's Work Around Los Angeles, California

photograph shown herewith illustrates the task of moving 60,000 cubic yards of earth and rock for the Edward L. Soule Co., who are building a large steel plant at Army and Connecticut Streets, San Francisco.

This material was being dumped in a very mushy marsh, which made it impossible to keep the fill in any semblance of order due to the sinking of the marsh land.

This made it a very difficult task for the trucks. In spite of this handicap, four of these trucks (the four which served the shovel operated by Mr. Hauser himself) moved more than 1000 cubic yards of earth and rock for a distance of one-quarter mile in a little over an eight-hour day.

For Mr. Hauser's watchword is "Efficiency."

27 Years on the Job and Still Going

From out of Paradise, Montana, comes the word of a shovel that has been doing its stuff for 27 years and is still delivering its daily yardage.

We are indebted to Wm. Kirbyson of Spokane, its operator, for the accompanying photograph.

This machine rolled out of the Bucyrus shops in 1897. It was known as a 40-ton shovel and carried a 2-cubic-yard dipper. For these 27 years it has been serving the needs of the Northern

Pacific Railway, up and down its lines. Mr. Kirbyson writes of it as follows:

"We are loading coal for the Northern Pacific Railroad and this machine is swinging all the time. She makes a few groans and some funny noises now and then, nevertheless, she is doing business every day."

Compared with some we know of, this machine is of a younger generation. But there are not many now on wheels that can boast of such a long period of steady grinding. Mr. Kirbyson has with him, E. W. Mesbitt, cranesman, Emil Rothwell, fireman, and R. H. Crouch, watchman.

Some Trip for a Pint of Ink!

A railroad has to haul one ton of freight forty-eight miles to get the money with which to buy one pint of ink, according to an executive in the Research Department of the National Transportation Institute. To buy a cross-tie, that expert tells us a ton of freight must be hauled 75 miles; a hand lantern, 105 miles; a freight car wheel, 1,287 miles; a monkey wrench, 115 miles; a day's work of a machinist, 534 miles — and so on.

Interesting figures. They give us a better idea of the problems of railroad management, and enable us to see the importance of each penny. Our railroads cannot depend on untried theories. Their success rests on a basis of freight-ton miles and passenger miles. They've nothing else to sell.

Rebuilding Twenty Miles of Railroad in Wyoming

Description of Sprague & Niseley's Contract with the Chicago, Burlington & Quincy Railroad Near Bonneville, Wyoming

LAST summer the usually arid State of Wyoming was deluged by heavy rains that continued over long periods. As a result, streams that usually showed as beds of dry sand were converted overnight into raging torrents that overturned bridges, washed out railroads and floated houses away. The Chicago, Burlington & Quincy railroad near Bonneville, Wyoming, was washed out for approximately twenty miles.

This necessitated rebuilding that section of the line at a higher elevation where it would be safe from future floods. At one place where the flood was most destructive it was not feasible to rebuild the road higher; here it was necessary to build better and stronger. So the old channel of the river was widened, and the material blasted out of a cliff was used to make a new fill for the railroad. While the work was in progress another deluge washed out the trestles, part of the blasted material, coal supplies, and the new fill, so that operations had to be started all over again.

Incidentally, it was this flood that caused the washout of the Coal Creek Bridge which collapsed with a Burlington passenger train and drowned fifty passengers.

The channel cut referred to was made by blasting out a cliff of sandstone more than 1000 feet long and from 20 to 60 feet high.

A cliff of sandstone over 1000 feet long and 20 to 60 feet high was drilled and blasted. From 11 to 50 holes were fired simultaneously.

The contract for the work was awarded to Sprague & Niseley, large railroad contractors of Casper, Wyoming, and Beatrice, Nebraska.

Well-drilled holes were put down 20 feet apart along the top of the cliff, and 25 feet back from the face at the bottom, and loaded with du Pont 60% Gelatin at the bottom and du Pont Red Cross Extra at the top. Because it was advisable to break up the bottom of the cut five feet lower than the old bottom, a small trench was blasted in front of the cliff to free the toe for the heavier blast. From eleven to fifty well-drilled holes were fired simultaneously. The total amount of explosives, all of which were du Pont, was 17,523 pounds. 30,000 cubic yards of solid rock were broken and displaced and were handled efficiently and rapidly with a Bucyrus 70-C railroad-type shovel, which may be seen in the photographs.

The excavation was done by a Bucyrus 70-C. It handled 30,000 cubic yards of rock.

In this work the main consideration was speed and results. Time was the chief factor, for traffic over the line was out of the question until the washed-out section could be rebuilt. Some idea of the amount of work involved in this undertaking may be gained from the fact that approximately 100,000 cubic yards of material had to be blasted and transported to the fills before the tracks could be relaid and trains put back on a service schedule.

If recurring floods had not impeded the work of the engineers and contractors, they would have made a record in railroad reconstruction. These floods, of course, delayed the work and increased the difficulties encountered.

The fills had to be protected by rip-rap made up of large rocks placed on the river side of the fill to prevent erosion, and this material was obtained and placed in position after the railroad resumed operation.

Not Likely

Jimmy, aged five, was being prepared for bed. Mother hunted high and low, but nowhere could she find a nightgown.

"Well, Jimmy," she said, "you'll have to wear your sister's just for tonight."

Jimmy drew himself up haughtily.

"What?" he asked in astonishment. "Wear a girl's?"

"Yes; why not?"

"I won't wear a girl's nightgown," said Jimmy, indignantly. "I'd rather go to bed raw."

— *The National Mason.*

The Bucyrus 20-B ¾-Yard Diesel Shovel Operating in the Gravel Pit

Another View Showing the Same Machine Engaged in Cleaning Up After a Heavy Washout

Views of the Gravel Pit of the Northern Gravel Company, West Bend, Wisconsin

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Gravel Pit Operation with a ¾-yard Diesel Shovel

Description of The Northern Gravel Company's Plant at West Bend, Wisconsin

THAT section of the State of Wisconsin including the counties of Waukesha, Ozaukee, Washington and Milwaukee, is known for its rich deposits of high-grade sand and gravel. The Northern Gravel Company of West Bend, Wisconsin, one of the largest producers of that district, supply a high grade of washed sand and gravel to that section of the state extending from Green Bay, Wisconsin, to Chicago, and are operating a deposit of 60 acres in the heart of that district.

The plant of the Northern Gravel Company is situated in Washington County, a mile and a half northwest of West Bend, 33 miles northwest of Milwaukee, and is connected by a loading track with the Chicago & North Western Railroad.

Two grades of gravel are produced by this company, one of which ranges in size from ¼-inch to 1¼-inch, which is used for curb and gutter and building purposes, and the other in sizes from 1¼-inch to 1¾-inch, which sells for foundation walls and road work. In addition to this, a high grade of torpedo or concrete sand is produced.

Gravel Pit Operation

As this article is written, this company is using temporarily in their pit a Bucyrus 20-B ¾-yard Diesel shovel mounted on caterpillars.* It is equipped with a 45 h.p. Atlas-Bucyrus engine of the full Diesel type, which will burn as fuel

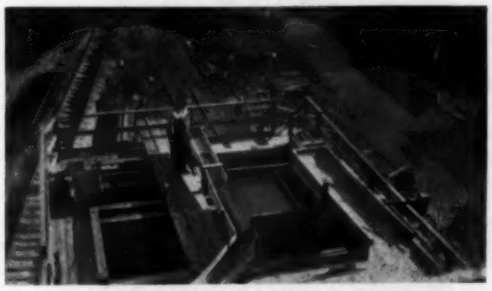
A View of the Quarry Face

any low-grade oil of high-heat value that will flow freely through the pumps.

The shovel was put to work on August 11th of this year, and since that time has been engaged principally with the task of cleaning up the pit after the greatest deluge of rain that this section of the state has ever known. Gravel pits throughout this section suffered considerably, and this company was no exception.

Due to the unusual conditions of operation the shovel was only in actual operation seven or eight hours of the day.

It is interesting to note the fuel consumption of this machine even under these conditions. We are told by Mr. W. L. Loveland, the manager of the plant, that over a period of 70 hours of actual operation, or approximately 10 days' work, the

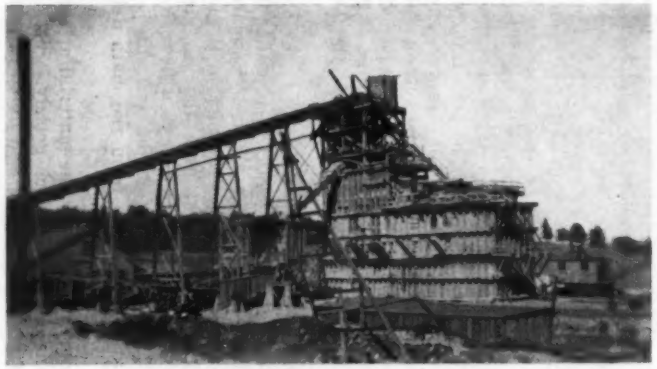


Looking Down on the Sand Troughs

total amount of oil burned was only 52 gallons, or approximately ¾ gallon per hour. Oil is hauled to the job at a cost of 9 cents a gallon, and at this rate of consumption only 7½ gallons were required to operate the shovel on a ten-hour shift at a cost of 68 cents a day for fuel. Mr. Loveland also informs us that an estimate of 10 gallons of fuel oil consumed in a ten-hour shift under normal digging conditions would be conservative. With the ¾-yard Diesel shovel digging in the pit under normal conditions, the output of the shovel would be 18 to 20 fifty-ton gondolas per day, which amounts, therefore, to a cost of 5 cents a car for fuel. On the other hand, the fuel cost of operating their 2½-cubic-yard railroad-type steam shovel, which gives the plant a capacity of 21 to 30 cars a day, is much greater than the Diesel shovel.

The shovel loads directly into 12-cubic-yard Western side dump cars which are hauled by a Baldwin locomotive to the plant. The material is dumped into a hopper through a 10-inch x 12-inch grizzly. Material over that in size is rejected. The hopper loads on to a 30-inch belt conveyor, 200 feet from center to center, and operated by a rope drive from the main driving shaft.

This conveyor deposits the material at the top of the plant on to a 2¾-inch grizzly. Sizes over 2¾ inches are rejected and sent down to two No.



The Washing and Screening Plant

View of the Shovel Cleaning Up After a Heavy Rain

The Primary Conveyor Leading to the Screening Plant

Another View of the Bucyrus 20-B Diesel Shovel

The Northern Gravel Company's Operations at West Bend, Wisconsin

A. Ray Mitchell, the Operator of the Shovel

5 gyratory crushers, which break up the material to 1½ inches in size and return it over another belt conveyor through the primary hopper and back to the plant.

The material then passes to 1¾-inch screens, the oversize of which is returned to the crushers, the undersize going to the 1¼-inch to ¾-inch screens and is shipped as coarse or mixed gravel. The oversize from the ¾-inch screen is sold as building gravel, the undersize from this screen passing to $\frac{5}{16}$-inch screens, the oversize of which goes to the building gravel bin and the undersize to sand boxes where the torpedo sand is separated.

The output of the plant under normal operating conditions averages from 26 to 30 fifty-ton gondolas a day or about 1500 tons.

The officers of the company are J. C. Buckbee, President; A. T. Stewart, Vice-President; and Gordon Smith, Secretary. Mr. W. L. Loveland is the manager of the plant, to whom we are indebted for this information.

*Since this article was written the shovel has been shipped to The South Dakota Cement Commission, Rapid City, South Dakota.

Wisconsin Has 21,673 Miles of Surfaced Roads, Ranking Third Among the States of the Union

With a total of 78,679 miles of roads in its highway system and 21,673 miles of surfaced highways, Wisconsin ranks fourteenth in total mileage and third in surfaced roads among the states of the nation, according to latest tabulations received by the State Highway Department from the United States Bureau of Roads and made public recently.

The largest part of the state's highways are of the gravel type, the summary shows. In this class are included 14,252 miles of highways in this state, placing Wisconsin third among states in this type. The second largest type of roads in Wisconsin is sand clay, which composes 3,860 miles of the state's system. In this class, Wisconsin ranks fifth among states of the union.

Ranks Twelfth in Macadam Roads

Of waterbound macadam construction, Wisconsin has 951 miles and ranks twelfth among states in this class. Surface treated macadam composes 817 miles of highways in this state, placing it eighth in this type. Of bituminous concrete construction, Wisconsin has but fourteen miles, ranking thirty-second, and of cement concrete, 1,456 miles, ranking fifth in this class.

Wisconsin stands highest among the states in low-type surfaced roads, according to J. T. Donaghey, State Highway Engineer, commenting on the compilation. States ranking ahead of Wisconsin in total surfaced highways are Ohio and Indiana, the first with 37,273 miles and the second with 42,294 miles.

California Leads in Concrete

California leads all other states in cement concrete roads, with a mileage of 2,888. Other states in their rank follow: Illinois, 2,321; Pennsylvania, 1,749; Michigan, 1,490; Wisconsin, 1,456.

In waterbound macadam roads, Ohio leads with 14,540 miles. Other states that lead Wisconsin in this type of construction are: Massachusetts, New York, New Jersey, Indiana, Illinois, Missouri, Kentucky, Tennessee, and Oregon.

In gravel shale roads, in which Wisconsin stands fourth, Indiana leads with 32,411 miles, followed by Michigan with 15,287 miles; Ohio, 15,220; Wisconsin, 14,252.

167,685 Miles of Roads in Texas

Texas is far in the lead of all types of highways, with a total mileage of 167,685 miles. Its closest competitor is Oklahoma with a total of 134,263 miles, Kansas ranking third with 126,551 miles. Wisconsin stands fourteenth in this respect, with a total system of 78,679 miles.

Minnesota leads states in the north central section with a total mileage of 107,103, followed by Illinois, 96,326; Ohio, 84,219; Wisconsin, 78,679; Michigan, 77,283; and Indiana, 76,246.

The statistics are based on latest reports to the Federal Board from the various states, it is said.

Using a Steam Shovel for Bunching Logs

The Weed Lumber Company of Weed, California, are not allowing their ¾-yard steam shovel to remain idle. When the season's excavation work has been completed, the steam shovel boom and dipper is removed and replaced by a crane boom, and the shovel is then sent to the woods and used for bunching logs for the tractors.

It has been found that considerably larger loads can be assembled in this manner than with horses and in a shorter time. With 300 feet of cable the machine easily reaches logs on side hills and rocky points where it is difficult with horses.

Definition

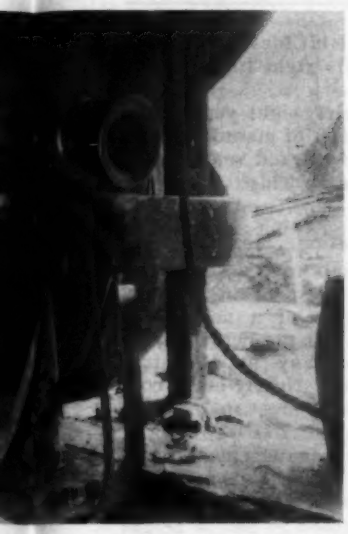
Flapper — A girl who powders her nose, bobs her hair and says: "Clothes, I am going downtown. If you want to come along, hang on."

One of the most interesting of the large construction jobs under way in Chicago's famous Loop District is the construction of the new Palmer House at Wabash and Adams Streets. To the left is shown W. J. Newman's Bucyrus 20-B high-lift ¾-yard shovel, excavating for the basement.

Our other views illustrate Thomas Single Electric Winches in operation on the caissons. The center view shows the 136th and last caisson being pulled, and at the right the winches mounted on high platforms with chutes for handling material from the holes. This type of winch has revol ing, replacing hand winches and the cableway

136 caissons were pulled, averaging 6 feet wi 95 feet. At the 70-foot level boulders were e water. Two five-foot forms were driven in be pressure of adjacent buildings, was passed.

Loading ballast for the Boston & Maine Railroad in Portland, Maine. The well-known contractors, T. Sm ¾-yard shovel to the task of loading 12-yard Rogers dump cars to the tune of 1200 cubic yards average per 10 cars at the rate of 5,000 cubic yards in six days. The shovel was in the hands of A. B. Mayer, operator, o



has revolutionized the method of caisson build-
cableway system.

6 feet wide and resting on bed rock at about
rs were encountered, then sand, quicksand and
iven in before this loose material, forced in by
passed.

The high platforms with chutes down the front, under the winches on the far side of the right-hand view, were tried as an experiment in speeding up the handling of muck from the holes. This was a complete success.

The job was finished several shifts ahead of contract. Each hole was completed in from 21 to 30 shifts.

The work was in charge of "Andy" Graham of the W. J. Newman Company, who dug the first caisson several years ago.

rs, T. Stuart Son & Company of Newton, Massachusetts, are here illustrated putting their 20-B Bucyrus
age per 10-hour day. On the same work they loaded filling material, consisting of sand and loam, into 6-yard
operation, of Rochester, New York.

The Excavating Engineer

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THE
EXCAVATING ENGINEER PUBLISHING CO.
Bradlee Van Brunt, Manager and Editor
South Milwaukee, Wisconsin
Printed in the U. S. A.

How Long Do They Last?

"What is the life of a steam shovel?"

This question is not an everyday one, but many of our readers have heard it often. The answer is one that can only be given after a long and thorough investigation, and, when finally given, would be of little use to anybody except to satisfy curiosity.

From time to time we have published in these columns items relative to machines that have been grinding away for a quarter of a century and more, and on another page we tell the tale of a 27-year-old mill that is still on the job out in Montana.

In the last analysis, the life of a shovel is very much like the life of a man. Its span of years depends upon many factors. How well it was built; how steadily it has been used; whether its life has been spent on the ease of sidetracks, in the grind of digging sand or under the wracking strain of hammering away at rock; the skill or the carelessness of its operators; the care that has been bestowed upon it, or the absence thereof; and the frequency with which its vital parts have been examined, adjusted or renewed.

There is no one formula to answer this question and every shovel operator knows it.

Down in the yards of the Southern Railway in Birmingham, there puffs away an old relic of former days. It is being used as a derrick for light work around the yards. On September 29, 1886, over thirty-eight years ago, this machine, with the name of Georgia Pacific Railroad Co. on its freshly-painted sides, rolled into Birmingham. It was known as a Bucyrus No. 1 crane-type shovel. It carried a 1¾-yard dipper. Its swing circle was of the then approved overhead type. Power was forthcoming from 8 x 12-inch double engines. It was the best that science had then produced, and it has done its bit for 38 years and is still on the job earning its right to be on the active list.

It is safe to say that thirty-eight years from today, with all that those years of manufacturing experience have taught, a 38-year-old veteran will not be so lonely in this great world.

Electric Shovel Demonstration, Hazleton, Pa.

Approximately 100 officials of the anthracite coal mining companies were guests of the Bucyrus Company at a demonstration of a new 320-B Bucyrus electric shovel on the property of the Cranberry Creek Coal Company at Hazleton, Pennsylvania, on October 9th. Nearly every coal company in that vicinity was represented.

The shovel was in charge of Pat Brown and is being operated under the management of J. Robt. Bazley of Pottsville. The demonstration lasted for about 2½ hours, with the shovel operating in a solid bank of rock about 90 feet in height overlying the Mammoth Vein. The material was loaded into Clark cars which were hauled by Vulcan locomotives.

After the demonstration the guests attended a dinner at the Hotel Altamont, which was preceded by vaudeville acts. G. A. Morison, Vice-President in Charge of Sales of the Bucyrus Company, was introduced by E. G. Lewis, their Eastern Sales Manager. Mr. Morison made a few remarks thanking the guests for their attendance, and his speech was responded to by W. W. Warriner, General Manager of the Lehigh Coal and Navigation Company, who stated that he believed he expressed the sentiments of all present in saying that the demonstration and the dinner approached nearer to an old-fashioned party than they have had in that section for a number of years.

The shovel is the largest machine of its type to be put into operation in this part of the country. It is equipped with an 85-foot boom and an 8-cubic-yard dipper, and is operated by Ward-Leonard direct current field control.

An Omission

In our October number we published an article entitled, "Limestone Quarrying with a Railroad-Type Shovel on Caterpillars," which described the quarrying operations of the Rock Cut Stone Company of Syracuse, New York. Through some oversight we omitted from this article the name of their Superintendent, Mr. H. C. Cox, who is in charge of their plant at Rock Cut. In view of the fact that upon Mr. Cox rests, in a great measure, the responsibility for the successful operation of the plant, we feel that this article was not complete with this omission.

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Theodore Roosevelt, October 27, 1858

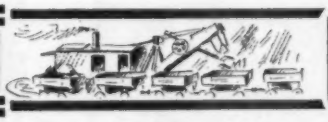
The birthday of the twenty-sixth president of the United States is celebrated throughout the length and breadth of this country as "Navy Day." It was a happy thought to associate "Navy Day" with Theodore Roosevelt, for no American of modern times had more to do than he with the present development of our Navy.

Roosevelt's motto in foreign affairs was: "Speak softly, and carry the big stick." In other words, be courteous and considerate to all nations, and yet exhibit such a degree of preparedness as would guarantee courteous and considerate treatment in return.

The American Navy has always been the pride of America. It established the freedom of the seas against Great Britain in 1812, and maintained it against Imperial Germany in 1917. Never the aggressor, it has always been a bulwark of defense, and the first to rush aid to stricken communities, such as Smyrna and Tokyo.

Our strong Navy, and that alone, enables us to dispense with a large standing army and yet enjoy a measure of security. Thus, our Navy is the antithesis of militarism.

The purpose of Navy Day is to see that this important phase of national defense is not forgotten in the rush of our daily affairs.



· FIELD NOTES ·

Cautions for Shovel Runners in Moving a Railroad-Type Shovel

BY GRIFF HUGHES

Reprinted from our issue of April, 1913, by request

When moving a railroad-type shovel back it is important to keep the dipper as close as possible to the bottom of the cut without interfering with the track. Don't have the dipper hanging with steam on the crowding engines. While the machine is standing waiting for a track to be laid the steam naturally gets down in the boiler and the fire will be bad. When you start to move, therefore, a great portion of the power will be taken from the crowding engines and the dipper will drop, endangering those who are in front of the shovel tearing up the track.

Another important thing to remember is not to neglect to chain the circle, in order to keep the boom from swinging. For when the shovel is being moved the back end may get off the track, the shovel may settle on one side or a rail may break, which would be apt to cause the shovel to start to tip over. Nine times out of ten there would be water in the swinging engines as the shovel has probably been standing by while the track was being laid. Hence there would be no power to swing the boom back and balance the machine. As a matter of fact, even though there were live steam, it would be very difficult to keep from losing control when boom has swung far over to side.

To prevent absolutely such an accident as this, it only takes a few minutes to fasten one end of the chain over the A-frame and the other end to the turnbuckle clevis on the circle. By so doing you will not only save yourself from the possibility of accident but you will probably save the firm for whom you are working much money and valuable time.

Lubrication of Wire Rope

Lubrication of a wire rope is highly important, as it performs two necessary functions; that is, to reduce internal and surface friction and to prevent corrosion. Ropes being operated in vapors or fumes, or in water, must be thoroughly lubricated to prevent corrosion. There is not much value in a lubricant which will run easily and drip from the rope. The ideal lubricant is one which will not harden upon exposure nor at low temperatures, and which can be made thin enough to penetrate. Therefore, a lubricant applied hot will generally give good service because in its heated condition it will penetrate and then upon cooling will congeal into a plastic filler throughout the rope.

A wire rope operating over sheaves must be well lubricated because it is subjected to considerable internal friction, and in order to overcome this friction the lubrication must be such that it will work in between the wires.

Digging Out Boulders

In a previous issue we published a short item stating that it was wise in shovel work to spend a little time in digging the earth from around a boulder before trying to pull it out with the dipper. It is a very common fault for shovel runners to "let her have it" in too much of a hurry.

The use of the boom engines is one of the great secrets of this kind of work. If you can't get your teeth under a boulder, it is a waste of time to try to push it out, because the push that can be exerted is not in an effective direction. It is always better to take extra time to dig around, until it is possible to get a hold underneath with the teeth.

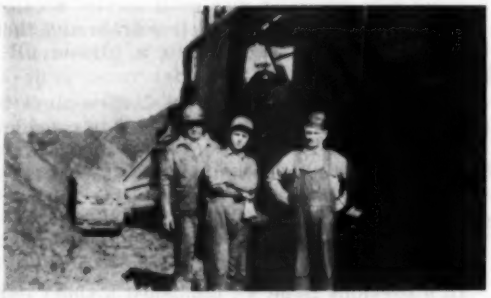
SHOTS FROM THE · FIRING LINE ·

Central States Notes

The above photograph was sent to us by J. D. Lougher who is on the firing box end of a Bucyrus 103-C shovel with the States Corporation in the Illinois Central grade revision work near Central City, Kentucky.

Mr. Lougher is a veteran of the business, having been operating shovels for 20 years. He is seen standing, while Sam Kelly, the cranesman is seated. Lougher and Kelly have been on this shovel for considerably over a year and Mr. Lougher tells us that he has one of the best boilers that he has handled. The shovel has been in heavy rock practically the whole time.

J. H. Simons advises us that he is working on a new Bucyrus 320-B shovel for the Dawson Daylight Coal Company at Dawson Springs, Kentucky.



The gentleman on the left of the above view is T. F. Smith, cranesman, and to the right, C. R. Sceley, operator, of the Atchison, Topeka & Santa Fe Railroad's 95-C caterpillar-mounted Bucyrus.

The machine is operating in the Santa Fe gravel pit near Chillicothe, Illinois.

New England States Notes

BY E. B. WILLIAMS

Jack Beede is now operating a 20-B Bucyrus shovel for J. C. Coleman & Sons of Boston, Massachusetts. Jack was operating the 70-Ton Bucyrus belonging to the Crystal Sand and Gravel Company of South Braintree, Massachusetts, until this company recently completed their contract with the New Haven Railroad for ballast.

Charlie Sullivan is at the levers of an Erie B for Jeremiah Sullivan & Sons of Cambridge, Massachusetts, on a basement excavation job in downtown Boston.

Albert Rongone is running a 20-B Bucyrus for T. Stuart & Sons of Newton, Massachusetts, on some real estate development work near Newton Centre, Massachusetts. Alfred Rongone is making smoke for his brother.

Louis Julien is running an Erie B for Frank Lanza & Sons of East Boston, Massachusetts, making room for a new school building in Somerville, Massachusetts. They have just completed a 14,000-yard job at East Walpole, Massachusetts, for the new plant of Bird & Sons.

The veteran crew of J. C. Coleman & Sons oldest 20-B Bucyrus. Left to right, Michael Cunningham, fireman, "Micky" Sullivan, pitman, and Ira Earles, operator.

The shovel is stripping loam at Brighton, Massachusetts.

New York and Vicinity

BY T. A. BURNS

In our long career we make but one claim to distinction. Several years ago when pasteboards to hit the plush in day coaches were hard to get, we were threatened with arrest twice by Tom Harris of the Lackawanna police. And Tom is the father of the illustrious Bucky.

Walsh Construction Company have the West Shore Railroad grade elimination work at Bogota now well under way. However, this is with the help of George M. Brewster & Sons who also have Bucyrus shovels on this work.

Wm. A. Ferguson Sons of Paterson have just started a trunk sewer in West Paterson with a combination Bucyrus 20-B clamshell and dragline. These people have now about finished the shovel work in connection with the Erie grade elimination through Paterson. This work required their two Bucyrus 20-B's and they even rented an Osgood shovel.

Gotham Construction Company are constructing a large dam at Lake Hopatcong on the property of the Morris & Essex Canal Company. The Verumulli Engineering Company of 38 Park Row are the engineers on this work.

Mr. Boyd of the Wilson & English Company modestly informed us that they have several more or less important jobs under way, and spoke especially of the grade elimination work for the Pennsylvania Railroad and State Highway Department of Pennsylvania at Vail near Tyron, Pennsylvania.

UMI

John Karney of James Hart, Incorporated, is back on the job again, we are very glad to be able to mention, and, candidly, Mr. Karney looks no worse for wear. Of course, it may be due to the fact that he has put on his winter things, but he doesn't seem to have lost a pound.

Arthur A. Johnson must be a "gad-about". At least we never seem to be able to find him in. A local steam shovel salesman says: "Perhaps he is out trying to keep the one-man shovels in operation." However, we usually have a very pleasant visit with his Mr. J. R. Eisenbarlt, which is sufficient compensation for a trip to Long Island City.

At the office of Mr. Chas. Hart at Staten Island we were recently received in his usual courteous and dignified manner. Candidly, this is refreshing, considering the undue familiarity of most of our contractor friends who dwell forcibly upon their opinion of our antecedents as we come over the horizon.

It is with regret that we announce the death of Hulbert Whitmore, Secretary-Treasurer of the well-known firm of C. B. Whitmore Company, contractors, at Lockport, New York.

Mr. Whitmore's death is a serious loss to his city and his county, as he was one of the most active and public-spirited men in the community, both in business and in social affairs.

Mr. Whitmore died on Saturday, September 13th, at 43 years of age. The C. B. Whitmore Company is one of the oldest contracting firms in that part of the state, having been established by Mr. Whitmore's grandfather, William Wallace Whitmore, in 1829.

Northwestern States Notes

BY A. R. HANCE, PORTLAND, OREGON

Carrying out the desire of William Duby, Chairman of the Oregon State Highway Commission, for completion of The Dalles-California Highway from the Columbia River to the south state line, Klamath County will finish its part in the construction next spring if the bond issue shortly to come before the voters of the county carries. In this issue is included a $55,000 item for the clearing and grubbing of 27 miles of the highway in northern Klamath County. This is the last thing needed, according to a statement made by Duby on a recent visit to Klamath Falls, to permit the Commission to embark without hindrance on its program of having this entire main highway graded and surfaced from one end to the other.

Logging operations of the Weyerhaeuser Timber Company have begun east of Ostrander, Washington. Two hundred men are employed at present, it is understood, and logging equipment is being moved from Yacolt to the woods. Grading of the 20-mile railroad has been completed, with about four miles of spurs leading from headquarters of the logging operations. It is understood that several hundred men will be employed when logging operations reach their full extent.

With a price of $8,000 placed on clearing contracts for the eight-mile stretch of the Lolo Pass Highway to the Powell Ranger Station in Montana, Ethell Brothers of Missoula, Montana, were low bidders, it was announced at the Bureau of Public Roads office here. There were five bidders for the four station contracts. Work on clearing the section, which will lead to a point 16 miles west of the Montana-Idaho line, will be started within a week, the contractors stated. It will be carried on as far as possible through the fall and winter months, so that the project may be ready in the spring for heavy road work in that region as another step toward completing the Lolo Pass project. Rough grading on the Montana side has been completed to the summit from Lolo Hot Springs, while a mile of grading has been finished on the Idaho side.

Pacific Coast News

BY P. H. BIRCKHEAD AND J. H. SACKETT, SAN FRANCISCO

We are very sorry to learn that Mickey McCarr has been very sick, and hope at this writing that his condition has improved and that he will be back on the firing line soon.

Frank Shoemaker is operating Bates & Borland's new Bucyrus 20-B high-lift steam shovel at the filter beds of the San Leandro Dam. Bert Hines is pushing the steam through the pipes on the 20-B. This team is sure making the dirt fly.

M. W. Fox dropped in the office to say hello a few weeks ago. Mr. Fox is a veteran operator, and is looking for a shovel that is in need of an operator. His address is 268 Market Street in care of Steam Shovelmans Union, San Francisco.

Contract awarded to Schmidt & Hitchcock, Phoenix, Arizona, for the excavation work in connection with the construction of a new leaching plant for the Inspiration Consolidated Copper Company to be built at Inspiration, Arizona. Work involves the following approximate quantities of excavation: 250,000 cubic yards of excavation, mostly rock.

Southern States News

BY C. N. BALLENTINE AND W. W. WHORLEY, BIRMINGHAM

Ed Isreal, who has been operating an Erie for Dwight P. Robertson Company on their Findley Yard job, reported that he was headed for the Brooks-Callaway work at Opelika, Alabama.

Fred Bradshaw is pulling the levers for J. J. McCarthy on his Bucyrus 20-B working on his new job on the Montgomery Highway in Jefferson County.

A. J. Thames, an old-timer, is now located with E. W. Parker at Milton, Florida.

Grading operations on the new John Sevier Yards near Knoxville, Tennessee, for the Southern Railway are being rapidly pushed by The Foundation Company of New York. Mr. S. S. Hammel is general superintendent.

Mr. S. A. Lacy, Anniston, Alabama, was laid up with a touch of fever, which attacked him while on his Seaboard work in Florida. We are pleased to say that Mr. Lacy is up and going again.

Mr. C. G. Kershaw, president of the Kershaw Contracting Company, and a prominent coal operator in the Alabama District, recently underwent a slight operation at St. Vincent Hospital. We are glad to say that Mr. Kershaw is rapidly recovering.

Mr. S. P. Darrow, an old-timer at the stripping game, is now in charge of the Saragossa mine at Saragossa, Alabama.

Mike Costello of Knoxville reports very excellent progress on his Central of Georgia work near Dadeville, Alabama. Con Costello is in direct charge of the operations.

Mr. John F. Shea, the well-known contractor and lumberman of Knoxville, Tennessee, had a narrow escape from death recently. While riding on a train on one of his logging properties, a mountaineer who had absorbed too freely of "white-lightning" decided to show his spirits with a loaded gun. In spite of the fact that the mountaineer had other armed companions, Mr. Shea tackled his man and succeeded in removing two guns. In the affray Mr. Shea was twice wounded, which we are glad to say did not have serious results, as he was shortly afterwards able to carry on his affairs as usual.

We have learned recently of a big coal merger in Kentucky, which will undoubtedly be of interest to our readers. The company formed will be known as the Great Western Coal Company, with a capital stock of $2,000,000. This includes the consolidation of coal properties in Hopkins and Ohio Counties in Kentucky, including Hawley McIsaac Company, Incorporated, Western Coal Company, Gideon Coal Company, Morison Coal Company, and the Kershaw Coal Company. The present output of the properties is estimated at 900,000 tons a year.

The Birmingham operators interested in the deal are C. G. Kershaw, T. M. Porterfield, B. R. Smith and J. S. Stone; the Memphis operators are John R. Collins and R. J. Ballings; and those from Madisonville are C. R. Hawley and H. H. McIsaacs.

Alabama is making a record in road construction that will be hard to follow. On October 13th the State Highway Commission awarded contracts for slightly more than a million dollars worth of road work in that state. The largest contract was for the construction of 10-1/10 miles of concrete road in Calhoun County to the Houston Construction Company of Houston, Texas, for $294,994.58. This company also received the award for the surfacing of another section of the same project, a little over 12 miles in length, at about $235,000 more. Grading and drainage on this section was awarded to C. B. Cox and W. T. Taylor of Clanton, Alabama. This project, which will begin at the Talledega County line between Talledega and Anniston, will run through Anniston, Jacksonville and Piedmont.

W. N. Thompson & Company of Fayette obtained the grading and surfacing of 18⅓ miles of road in Fayette County at $174,114. Stanley & Singer were low bidders for gravel surfacing on 14½ miles in Perry County. 2-1/10 miles on the same project was let to Finnell & Tupecker of Tuscaloosa. W. A. Taylor of Sylacauga was the successful bidder on 2-8/10 miles of road in Covington County.

Mississippi County, Arkansas, will let about sixteen million cubic yards of drainage work about the first of the year. Morgan Engineering Company of Memphis are the engineers in charge.

St. Louis Items

BY A. B. KOENIG

Z. C. Mitchell, who has been associated with the L. J. Smith Construction Company for the past twenty years, is now with the Flick Construction Company of Chicago. This firm has contract for 600,000 yards of dragline work at Monticello, Indiana, and also a steam shovel job for the Elevated Line in Chicago.

The Winston Brothers Coal Company has purchased the plant of the C. C. & E. Coal Company west of Clarksville, Arkansas. The home office of this Company is in Minneapolis, Minnesota, and W. O. Winston, Jr. is superintendent of the local plant. Plans for enlarging the plant are under way and when completed it is said this will be the largest plant of its kind in Arkansas.

Roy Hatfield of the C. R. Cummins Company, Cleveland, is here getting supplies and material for their new dragline job awarded them by the Little River Drainage District at the last letting.

Preliminary work of constructing a driveway down the center of McKinley Bridge here was commenced October 3rd. The driveway will cost approximately $100,000, and is preliminary to construction of a 40-foot roadway on the south side of the bridge. The center driveway is to furnish an artery for traffic while the south side is being torn up. Other alterations, expected to cost approximately $2,000,000, are planned. The alterations on the driveways will necessitate enlargement of the piers to carry the added weight. Three months will be required to finish the middle driveway. Contracts calling for the $2,000,000 improvements will be awarded next year.

W. H. Wignall finished his work on the Illinois Central Railroad at Freeburg, Illinois. He has a 12-team outfit idle that he would like to place on some grading in this part of the country. State Center, Iowa, will catch him.

The last obstacle to the start of construction of the Seventh Street Viaduct in Kansas City, Kansas, was removed when Daniel Munro, contractor, was notified by the Union Pacific Railroad Company on October 2nd that he had been awarded the contract for constructing the substructure for the company's share of the viaduct. Mr. Munro, who already has obtained the contract for constructing the Rock Island's and Terminal Companies share, will start work immediately on removing the old viaduct, which must be torn down before the new one can be started. The viaduct must be completed within a year under the contract. The Union Pacific will do its own structural steel work. The city will supervise the entire project. The structure will span the tracks of the three railroads interested and will give access to the Union Station there.

B. B. Huffman, Grand Tower, Illinois, wants a grading job suitable for a 12-team outfit.

Carmichael Cryder Company were awarded contract by the Pennsylvania Railroad at Fort Wayne, Indiana.

J. O. Patterson & Company were awarded two paving contracts by the City Council of Springfield, Illinois, at $3.74 a square yard.

The Missouri Pacific Railway has asked authority from the Interstate Commerce Commission to extend its Eudora Branch from Epps to Delhi, Louisiana.

W. H. Vaughn & Sons write us from Duncan, Mississippi, that they expect to finish their work there the fore part of October. They will have a shovel and grader outfit idle, ready to place on work immediately.

A. F. Hartigan, Charleston, Illinois, had a representative in here looking for some dump wagons that he wants to add to his outfit.

The Bridges Construction Company started on their sewering and paving job in Hickman, Kentucky. They will complete it in ninety days.

Henry Schweitzer is grading property in southwest part of the city.

Dan Condon finished his work on the Missouri Pacific Railroad in Southern Illinois. He moved his outfit onto a grading job in western part of St. Louis.

Harris & Mosby completed their highway work at Concordia, Missouri. They have a good machine outfit idle that they would like to place on similar work.

Hal McCoy expects to have his team outfit busy on the Kansas City-Olathe Highway for some time.

The Highway Construction Company started outfit to work near Overland Park on the Fort Scott Short Line.

Hall Hardman Construction Company have their outfit on highway work out of Portis, Kansas.

Cook & Stucker completed their work near Perry, Kansas. Moved this outfit to a job on the Kansas City-Olatha Highway near Olatha, Kansas.

P. J. Murphy is changing road bed for the Burlington and Wabash Railroad at Randolph Heights, Missouri.

T. E. Newell finished his grading on the Illinois Central Railroad at Pinckneyville, Illinois. He has a good fresno outfit idle at that point.

Pat McGraw has his team outfit idle here looking for a piece of grading.

D. C. Gahan was awarded contract for grading the gap of highway remaining between Williamsville and Sherman, Illinois.

W. A. Gierke, Minonk, Illinois, has a 24-team outfit idle at that point.

Polk & Gibson are finishing a six-mile spur on the Eastern Illinois & Terre Haute Railroad in Southern Indiana.

Woodruff & Losson are working their outfit by the day at Yeoman, Indiana, and are in the market for a grading contract suitable for a machine, fresno or wheeler outfit.

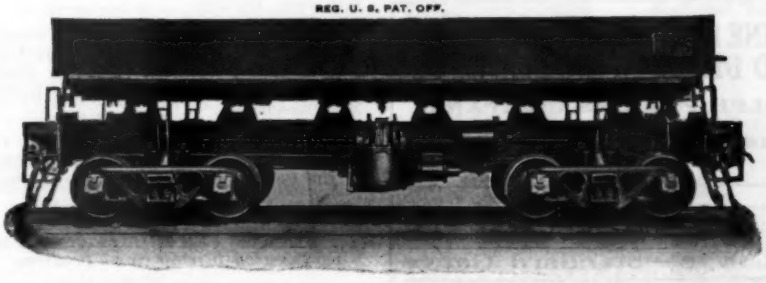
Henry G. Althoff came in from Tewtopolis, Illinois, looking for a grading job suitable for a machine outfit.

The J. W. McMurry Contracting Company completed their concrete work on the Frisco Railroad near Lindenwood, Missouri, and moved this outfit on to a similar job on the Frisco Railroad in Oklahoma.

Contractors when in want of work or labor for their outfits write or wire Koenig Labor Agency, 612 Walnut Street, St. Louis, Missouri, or 501 Delaware Street, Kansas City, Missouri.

L. L. Zacharias, Secretary of the Rock Hill Quarry, had the misfortune to break an arm. Zach in place of walking around a ditch tried to jump over it, but failed to make connections, fell in the ditch and landed on his arm.

TRADE THE SEAL OF SATISFACTION K&J MARK
REG. U. S. PAT. OFF.



AIR DUMP CARS SIDE DUMP CARS

THE CASE CRANE & ENGINEERING CO.
Kilbourne & Jacobs Division
COLUMBUS, OHIO

For convenience in making inquiry use postal inserted in this number.

Oklahoma

The above photograph was sent us by Mr. Roy Edwards of Chelsea, Oklahoma. It illustrates a new Bucyrus 50-B shovel stripping coal for the Bushyhead Coal Company at Chelsea, Oklahoma.

Mr. Edwards is the artist at the levers.

Canada

Montreal and Vicinity

BY J. M. WARD

A very unfortunate accident occurred a few days ago, which resulted in the loss of life of Sir William Price, head of the firm of Price Bros. & Co., the large lumber, pulp and paper outfit. Mr. Price was also connected with Mr. Duke in the Duke-Price Power Co., who are developing powers on the Saguenay River under the name of the Quebec Development Co.

Sir William Price was discussing the question of some slides, which had taken place, with a couple of his engineers, when, without any warning, the spot on which they were standing gave way, and while the two engineers jumped to safety, the body of Sir William Price was hurled into the mass of waste and logs and has not yet been found. It is thought that possibly he was covered up in the excavation or washed out into the river.

OIL ENGINE DRIVE FOR DRAGLINES AND DITCHING DREDGES

RANDOLPH-PERKINS COMPANY
Geo. B. Massey, Vice President
1216 First National Bank Bldg.
CHICAGO

For Sale—BUCYRUS SHOVELS
Railroad Type—Standard Gauge

70 Ton	95 Ton
2½ and 3-Yard Dippers	4½ and 5-Yard Dippers

Self-propelling, railroad-type Bucyrus Steam Shovels in 95% condition. Carefully rebuilt and overhauled in our Joliet, Illinois, shops where they are now located for immediate release or your inspection.

Also a number of 12-yard all-steel Western and Oliver Dump Cars.

HARRIS BROTHERS CO.
35th and Iron Streets CHICAGO, ILL.

He will be a big loss to the community, and particularly to the Price Bros. Co. of which he was the active head.

Fraser-Brace & Co. are undertaking the job of filling in on the Price Bros. work to prevent further landslides. This will run into considerable yardage, in fact it is estimated there is over a million yards.

Gorman & Peckham are undertaking some steam shovel work for the Quebec Streams Commission. Our old friend Tom Cozzolino is also going to do some filling in work for the Quebec Streams Commission.

Frank Walters is undertaking about $60,000 worth of gravel road for the Provincial Department of Highways.

C. Carniel has finished up his rock work for the Canadian National Railways at Brockville and is now located in Montreal.

Charlie French of C. D. French & Co. has finished up his train filling job on the Toronto & Northern Ontario Railway. He expects a further extension next Spring.

Osterberg & Rutherford, Montreal, have undertaken 4000 feet of 2 x 3 brick sewer for the City of St. Lambert, Province of Quebec.

Miles Lonergan is doing the heavy rock sewer job for the City of Quebec.

The Grenville Crushed Rock Co. have closed down operations for the season. They expect to have further contracts for rock ballast next Spring.

Toronto and Vicinity

BY M. DE WIND

The Dominion Construction Co., Ltd., Toronto, are working on a contract for the building of a sewer at Schumacher, Ontario.

H. M. Scott & Company, Toronto, are making good progress with their sewer contract in East York Township near Toronto.

The Foundation Company of Canada, Ltd., of Montreal are working on grade separation at West Bloor Street, Toronto, for the Canadian Pacific Railway and the City of Toronto jointly. The work is in charge of Mr. Casselman.

The J. H. McKnight Construction Co., have a large contract for sewers in York Township. The engineer of the Company, Mr. Hagelin, is in charge of the work.

The Welland Ship Canal, Section 7, will be tendered for on October 30th at Ottawa. This should make 1925 a busy season in ship canal progress.

The work on Section 8 of the Welland Ship Canal is making good progress under the Northern Construction Company and Stewart & Welch who make their headquarters at Port Colborne. Mr. R. B. Herron has taken a subcontract from them for stripping work.

Kilmer & Barber, Ltd., of Toronto, are working on a contract for the construction of concrete cribs at Port Colborne. The cribs are being poured at Port Maitland on the Grand River which is 20 miles from Port Colborne, they are then towed by tugs to the various points of emplacement and sunk.

The Bates & Rogers Construction Co. of Chicago are still engaged on crib and concrete work at Port Weller, Ontario. Mr. D. E. Mather is in charge.

The reconstruction work of the Canadian National Electric Lines through the streets of Niagara Falls, Ontario, has been completed by Roger Miller & Sons of Toronto. This job was only started early in August, so they have made quite fast time.

Campbell & Lattimore, Toronto, are working for the Canadian National Railway on grade separation at West Bloor Street, Toronto.

Mohan & Jerou, sewer contractors, are engaged on several tunnel sewer jobs in the Toronto District. An important one is at West Bloor Street, and another in East York Township.

John Ostler advises us that he is operating a Bucyrus 70-C for Porter Brothers on the Welland Ship Canal at Thorold, Ontario.

Winnipeg and Vicinity

BY F. X. AMOSS

We regret to chronicle the death of Mr. E. G. Penniman, at Fort William. Mr. Penniman, who was born in the United States, came to Fort William eighteen years ago, and at the time of his death was probably the best-known contractor at the Head of the Lakes. He built two theatres in the city, as well as several bridges in the neighborhood.

Mr. Sam Pritchard, a contractor widely known in Moose Jaw and district, met with a fatal accident when he fell thirty feet from a scaffold erected for the construction of the new Catholic church at Moose Jaw.

Mr. V. H. Campbell, District Engineer, under the Department of Public Works, Manitoba, left last month to blaze a trail for a proposed road from the Winnipeg River to the gold fields in the Rice Lake District. The road, when constructed, would be approximately forty-five miles in length, and the survey work will probably take several months, but it will permit of travelling in the winter time without crossing Lake Winnipeg, and make the mining area of easy access in the summer months.

Mr. Charles W. Sharp, pioneer contractor of Winnipeg, died in Saskatoon, Saskatchewan. The late Mr. Sharp, who was seventy-three years of age, entered the contracting business in Winnipeg fifty years ago, and many buildings in the city stand as an alignment to his craftsmanship.

The official opening of the Winnipeg Central Heating Plant has been made. The ceremony was performed by Mayor Farmer at the city hall, and everything points to very successful operation this winter. By it a great portion of down-town Winnipeg is heated from a central station, and the service will no doubt be extended every year until it reaches the residential sections.

Mr. John A. Reid, one of the best-known engineers in Ontario, and formerly with the O'Brien interests in Northern Ontario, has been appointed engineer for the Bingo Gold Mines.

TRADE NOTES

Massey Concrete Products Plant Purchased by George Cutter Works

The purchase of the Milwaukee Plant of the Massey Concrete Products Corporation and the concrete post business by the George Cutter Company of Indiana has been announced by the Westinghouse Electric & Manufacturing Company. The Massey Corporation has been engaged in the concrete post industry, manufacturing the well-known line of Hollowspun reinforced concrete street-lighting standards and concrete poles for street railway service at the Milwaukee Plant, and the George Cutter Company will now undertake the manufacture of these products.

The transfer of the Massey Plant became effective July 1, and the Westinghouse Company will handle the Hollowspun business through the George Cutter Works.

Westinghouse Turbine Blading Department Moved to South Philadelphia

The entire turbine blading department of the Westinghouse Electric & Manufacturing Company, now at the Main Works at East Pittsburgh, Pennsylvania, will be moved to the South Philadelphia Works of the Company at Lester, Pennsylvania.

Westinghouse Receives Million Dollar Staten Island Electrification Contract

Westinghouse Electric and Manufacturing Company recently received orders totaling approximately $1,000,000 for apparatus to be used in connection with the $10,000,000 improvement that the Baltimore & Ohio Railroad is carrying out on Staten Island, in electrifying the Tottenville and South Beach Branches of its subsidiary, the Staten Island Rapid Transit Company.

The Westinghouse contract covers five automatic substations with supervisory control on the Staten Island Rapid Transit Company and high voltage equipment for the Staten Island Edison Corporation which will supply the power for operating the railway.

The automatic supervisory control substation which will receive high voltage current from the power house and transform it into low voltage current for the railway represents one of the most modern developments of electrical engineering.

Four of the stations have absolutely no attendants, and the fifth will be the center control station for the whole system. All the processes of a normal character, such as increasing or decreasing the power supply in response to the demands of the railway, will be carried out automatically by the substation.

In addition, each station will be under the direct and complete control of the power load dispatcher located at the central control station. This is the purpose of the supervisory control system. By means of this system, the dispatcher can ask any station for information in regard to any detail of operating conditions, such as the load of the machine, position of switch, or even the temperature of the bearings. The information desired is promptly given automatically by the station questioned, and the dispatcher can then, by pressing a button, make any change at the station that circumstances require.

Each of the four substations will contain two 1,000 k. w. rotary converters with the necessary auxiliary apparatus, and the fifth will contain a single converter of the same size. Current to be supplied to the railway will be the same as that used in operating the subways of Brooklyn and Manhattan.

REVIEW OF BOOKS and CATALOGS

We shall be glad to review, in this column, such books and catalogs as are sent to us.

100 AND 1 WAYS TO SAVE MONEY WITH PORTABLE AIR POWER, 8½ x 11 inches, 72 pages, with cover, splendidly illustrated. An up-to-date description of portable air compressors and the many air tools and labor-saving methods made possible by them.

Over 100 cuts show various applications by general contractors, public service companies, railways, road-builders, factories, mines, etc.

Cost data comparing hand with machine methods is indexed. Illustrates use of Paving Breaker, Jackhamer, Rock Drill, Trench and Clay Digger, Backfill Tamper, Little Tugger Hoist, Tie Tamper, Pneumatic Drill, Riveter, Calking Hammer, Drill Steel Sharpener, Sand Blast, Paint Spray, Cement Gun, etc.

Copies may be obtained from *Ingersoll-Rand Company, 11 Broadway, New York*, or from any of their branch offices.

HARD ROCK

When Your Shovel is Digging in Rock Like This, It Must Be Equipped to Stand the Heaviest Digging Strains

TAYLOR MESABA
STEAM SHOVEL CHAIN

Made of the Finest Material, Short Links and Perfect Welds

Is specially made to withstand the short, sharp jerks and sudden strains of the heaviest rock excavation

Sizes Carried in Stock for All Makes of Shovels:
⅝" ¾" ⅞" 1" 1⅛" 1¼" 1⅜" 1½" 1⅝" 1¾"

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The Excavating Engineer

Ten Cents Per Copy **PUBLISHED MONTHLY** **One Dollar Per Year**

Vol. 18 **MILWAUKEE, DECEMBER 1924** **No. 12**

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ADDRESS ALL COMMUNICATIONS TO

THE EXCAVATING ENGINEER PUBLISHING COMPANY

BRADLEE VAN BRUNT, Manager and Editor

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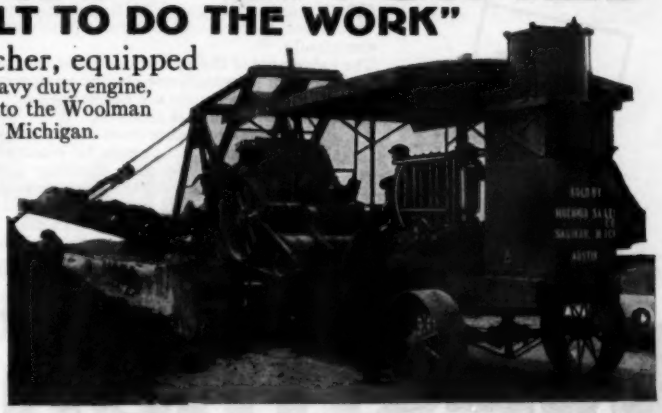

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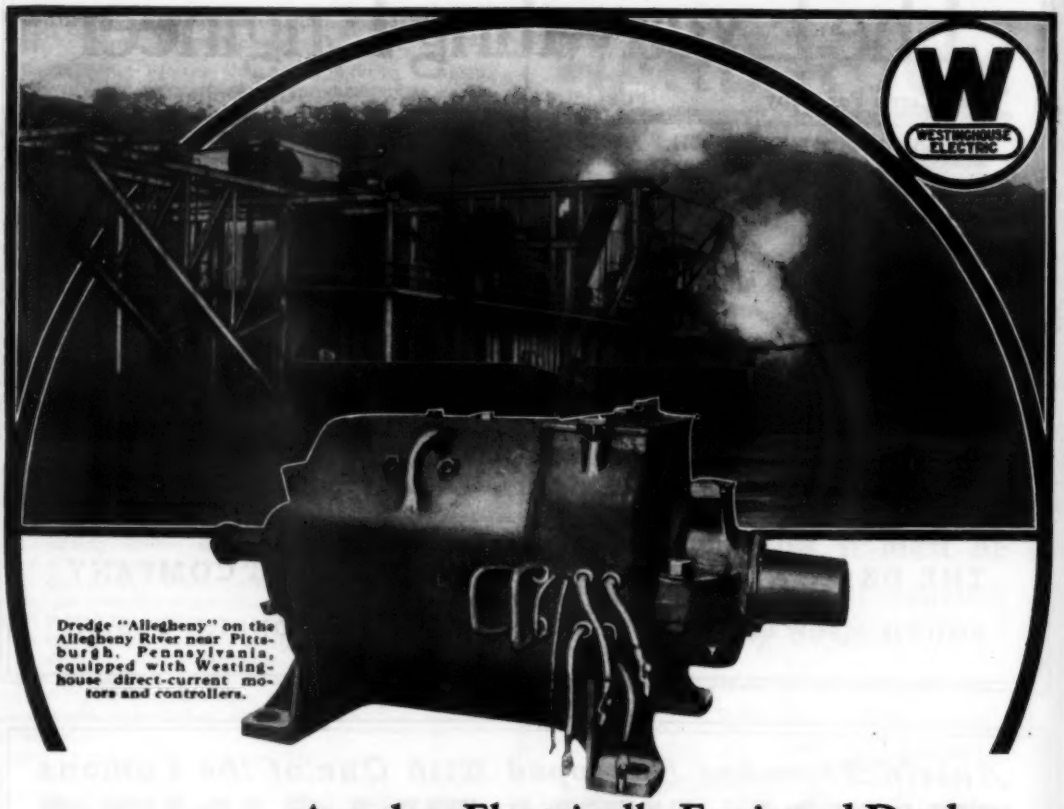

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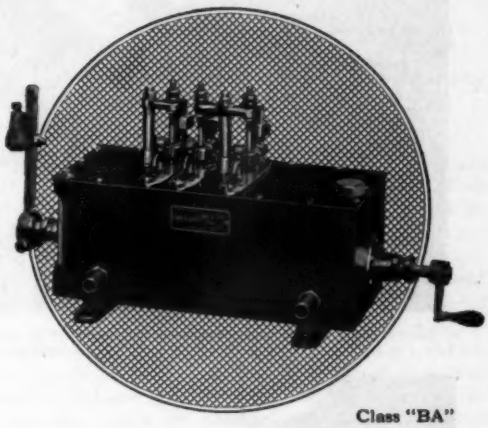

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A General View of the Work Taken in October 1923 in the Early Stages of the Construction, when Preparations for the Dam Foundation Were Being Made

Another View Taken from the Same Position on May 27th, When Nearly Half of the First Lift of the Rock Fill Was Completed.

Views of the Dix River Dam at Dixdam, Near Burgin, Kentucky, Being Built by the Kentucky Hydro-Electric Company. The L. E. Myers Company have the contract for the work, which involves the excavating and handling of nearly two million yards of solid rock.